## (19) World Intellectual Property Organization

International Bureau



## 

(43) International Publication Date 3 February 2005 (03.02.2005)

PCT

## (10) International Publication Number WO 2005/010916 A2

(51) International Patent Classification<sup>7</sup>:

H01J 35/00

(21) International Application Number:

PCT/IB2004/002424

(22) International Filing Date:

16 July 2004 (16.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/491,032

30 July 2003 (30.07.2003) US

(71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

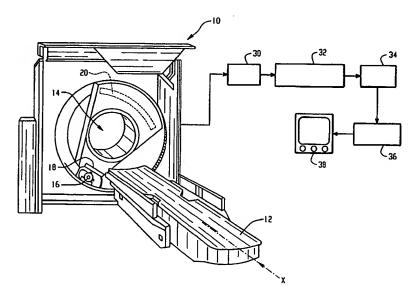
- (71) Applicant (for AE only): U.S. PHILIPS CORPORA-TION [US/US]; 1251 Avenue of the Americas, New York, NY 10510-8001 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): LEVENE, Simha [IL/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL).

MALAMUD, Gabriel [IL/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL). ALTMAN, Ami [IL/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL).

- (74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS N.V., c/o LUNDIN, Thomas, M., 595 Miner Road, Cleveland, OH 44143 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: SHAPED ANODE X-RAY TUBE



(57) Abstract: An x-ray tube (16) suitable for use in a computed tomography (CT) scanner (10) includes an envelope (42) which defines an evacuated chamber. An anode (40) and a cathode assembly (70) are disposed within the chamber. The anode defines a target area (56) which is struck by electrons (52) emitted by a filament (54) of the cathode assembly and emits x-rays (46). The target area lies partially on a first annular portion (80) which is disposed at first angle (a) relative to a plane perpendicular to an axis of rotation (R) of the anode, and partially on a second portion (82,120) which is radially spaced from the first portion and disposed at a second angle (B), relative to the plane. The second angle is greater than the first angle. The portions of different slope allow the x-ray tube to take advantage of a shallow angle, while minimizing the heel effect.



## WO 2005/010916 A2

| 1910 | 1010 | 102 | 104 | 104 | 105 | 105 | 106 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 | 107 |

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.